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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/759,362	01/16/2001	Toshiaki Aoi	Q62650	1920

7590

01/30/2003

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EXAMINER

CHU, JOHN S Y

ART UNIT

PAPER NUMBER

1752

DATE MAILED: 01/30/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/759,362

Applicant(s)

AOAI ET AL.

Examiner

John S. Chu

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 December 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4-9 and 11-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 9 and 11-17 is/are allowed.
- 6) ☒ Claim(s) 1,2 and 4-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

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DETAILED ACTION

This Office action is in response to the amendment received December 2, 2002.

1. The rejection under 35 U.S.C. 102(b) as being clearly anticipated by TZOU is **withdrawn** in view of the amendment to claim 9, which now recites the specific polymer having formula (a') not disclosed in TZOU.

2. The rejection under 35 U.S.C. 103(a) as being unpatentable over SAKURAI et al is **withdrawn** in view of the amendment to claim 1 which recites a resin having a repeating unit of formula (a) not disclosed in SAKURAI et al.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1 and 8 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by WAKATA et al.

The claimed invention is drawn to a negative-working resist composition for electron beams or X-rays comprising (A) a compound generating an acid and/or radical species by the irradiation of electron beams or X-rays, (B) a resin which is insoluble in water and soluble in an alkali aqueous solution soluble in an alkali-aqueous solution and having a repeating unit shown by the following formula (a), (C) a crosslinking agent causing crosslinking with the resin of component (B) by the action of an acid, and (D) a compound having at least one unsaturated bond capable of being polymerized by an acid and/or a radical.

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WAKATA et al discloses a liquid light-sensitive resin composition comprising a modified polystyrene, a polymerizable compound having at least one ethylenically unsaturated double bond, a compound having at least one epoxy group (crosslinker), a photopolymerization initiator or a polymer initiating system, a thermohardening catalyst capable of inducing a thermal reaction of the at least one epoxy group and an organic solvent, see the Abstract and column 4, lines 31-68.

The modified polystyrene resin A1 of WAKATA et al is characterized in column 4, lines 47-65 wherein the base resin is a polyhydroxystyrene that is reacted with a glycidyl methacrylate. The resultant resin would still possess several polyhydroxystyrene group which meets the claimed resin having a group of formula (a).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over WAKATA et al in view of BANKS et al.

The claimed invention has been recited above and is included by reference.

WAKATA et al has been discussed for disclosing a liquid light sensitive composition comprising a photoinitiator, a crosslinking ingredient, a resin having a group of formula (a) and a ethylenically unsaturated compound, see the Abstract and column 4, lines 32-47.

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WAKATA et al lacks the claimed acid generating ingredients as recited in the dependent claims.

BANKS et al is cited to disclose suitable photoinitiating compounds and acid generating compounds for liquid light sensitive compositions which are used in printed circuit formation, see column 4, line 42 – column 14, line 66. These compounds include free radical generators, onium salts, peroxides, etc.

It would have been *prima facie* obvious to one of ordinary skill in the art of liquid light sensitive composition to use any of the listed compounds in BANKS et al as a photoinitiator in the art of WAKATA et al and reasonably expect same or similar results of high sensitivity, a film excellent in electrical properties and mechanical/electrical resistance.

7. Claims 9, 11-17 are allowed.

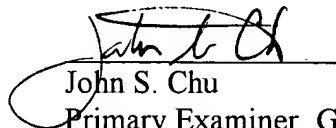
None of the prior art references of record disclose or claim the recited negative-working composition comprising a compound generating an acid and/or a radical species, a resin having at least one unsaturated bond polymerizable by an acid having the formula of (a') and a crosslinking agent.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Chu whose telephone number is (703) 308-2298. The examiner can normally be reached on Monday - Friday from 9:30 am to 6:00 pm.

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The fax phone number for this Group is (703) 305-7718.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0661.


John S. Chu
Primary Examiner, Group 1700

J.Chu
January 25, 2003